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CENTARO EDITION

APRIL 1993

VOLUME 6 NO. 4

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## From the Editor



**Contentless Computing**  
Recently I visited a computer show in San Francisco. The big trend I noted was the invasion of content into computing.

**What do you mean by "content"?**  
Not just the software industry has been dominated by application software. Applications are the programs that you buy computers to run: spreadsheets, databases, word processors, personal information managers, etc.

At the show, I witnessed an example of a different type of

software: media. The new Computers like Sony, Neopace and Ideaquest were on hand to help large libraries to demonstrate their growing collections of everything you can think of on CD-ROM. When I saw gatekeepers, you know they must be big books involving those are the same folks who signed Madonna and Michael Jackson for mega-million-dollar deals. They ignore that their company owns Alex Haley's *Ambrogio of Malacca* & the *Barbarians*. I did say I might move to Garfield — a digital movie format for Macintosh.

### Changing the way books are used

The books were interesting because you can add your own notes to annotate the text and do searches on words. If, for example, you wanted to verify the authenticity of the recent movie rating the *Ambrogio of Malacca*, a CD-ROM, you could search on particular word references. This kind of usage would be inevitable for scholarly research and topics. Given that state of the "Dead White Male" studies have passed into the public domain, we are seeing many of their collected works showing up on CD-ROM (Wolfgang Iser, Mark DeLander and Lewis Carroll, to name a few).

### Solving the world's problems—in high school

The movie towards content is not just dominated by the big guys. There was a fellow tucked away in the University booth selling a disc with all the data in the world. Well, almost. He said that the (PUM) University disc contained the same data that Google Book and Area Mathematic were working at. The world has moved on the development. With a couple of clicks, he was projecting population growth figures for Japan and Canada and comparing it to gasoline consumption in those two countries. There was historical data, but more interestingly, it included projections from the U.N. for the next 20 years, before everything gets interesting. This disc is targeted at the high school market. The aim is to get kids doing data work, analyzing trends like Beckman's Pulse, a World Game, and a game called "Future". It is an exciting time, for students and teachers alike — learning how data and how easy to work with.

Is there is any question that the future of education is firmly wrapped up in computers? It was confirmed by the publisher of the CD-ROM. (Available from PUM) Education Group, 703/994, 1000.)

### CD-ROMs for the masses

If you don't have a CD-ROM yet, maybe getting one. The price have come down substantially and there is a massive amount of data becoming available in very low density for much. Check it out.

Enjoy the show

*Gordon Goble*

Gordon Goble  
Editor/Publisher

## IN THIS ISSUE ...

### FEATURES



## Publish Like a Pro ..16

BY GRADIE BENNETT

## PageMaker 5.0 Update .....20

FROM TONY

## MS-DOS 6.0.....22

MS-DOS isn't ready for the OS replacement game just yet. BY GOLF WHEELWRIGHT

## Local Bus Video ...24

Technical details for computer buses. BY BOLDY GREEN

## Desktop Music Publishing .....33

BY GRADIE BENNETT

## REVIEWS

Mac

## Now Up-to-Date 2.0 .....21

The most advanced calendar scheduling program for the Mac. BY GRADIE BENNETT



CoverTalk

## Why We Need Electronic Highways ....32

BY JAMES MACLACHLAN

BookReview

## Gates.....38

How Microsoft's Mogul reinvented an industry and made himself the richest man in America. BY KATH SCHROEDER-ROBERTS

GameReview

## World Circuit.....40

The Grand Prix simulator. BY GORDON GOBLE

## DEPARTMENTS

Mailbox .....	6	Newsbytes .....	42	Classified .....	60
Mailroom .....	8	User Groups .....	48	Index of Advertisers .....	54
What's New .....	11	Calendar of Events .....	48		

## EDITORIAL SCHEDULE

ONTARIO EDITION

ISSUE May '93	ISSUE June '93	ISSUE July '93
TOPICS: Network/OS, C/D, Macintosh	TOPICS: Hardware + CD-ROM, Security	TOPICS: New Storage Options, eMail
Guest-Editing the Right Operating System	9 Perspectives Columns	Specials: Opened Doors + Columns
COPY & CLASSIFIEDS: Wed, Mar 31	COPY & CLASSIFIEDS: Wed, Apr 14	COPY & CLASSIFIEDS: Wed, June 9
CAMERA READY ADS: Thurs, Apr 1	CAMERA READY ADS: Thurs, Apr 15	CAMERA READY ADS: Thurs, June 7
DESTRUCTION: Fri, Apr 16	DESTRUCTION: Fri, Apr 16	DESTRUCTION: Fri, June 18

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## Mail box

### Unnecessary Comparisons: Mac vs. PC

I would like to point out an annoying trend in *The Computer Paper* — a trap which many other publications have fallen into. I have noticed in the promotion of the Mac vs PC battle. For quite a number of us it is not only comparing like a defective team off. The reasons are (a) The Mac and PC are based on entirely different machines — even with the advent of DOS/Windows. (b) A Mac vs PC battle fought on the pages of computer magazines is only counter productive to the computer industry. (c) How many people have actually been influenced by such battles? (d) There are other problems in the industry apart from those of the Mac and PC.

The latest episode is the article "Windows Illuminated: A Bit for Windows" by Nelson Rapp. It may be unintentional, but the tone of his article suggests the overall superiority of the Illuminated 4-Graphics Windows environment. I wish he'd review his article, not in the process and, instead of the integrity of the article would suffer by leaving out all references to the Subtleties.

My suggestion is that I send all your other contributors to try to review the products they want to, without reference to competing products. If I own a Mac, the article would not make me go and try a PC/Windows machine, or the absence of certain features in the Mac's version would not make me dump my Mac. Evaluate the product and leave the rest to the reader. If I am a Mac owner, I think the version available for the Mac lacks too many features to be simply sent to competing products in the Mac world. The IBM Business is so disconnected with the Mac's Macworld.

Then, the number that come off in water to run in your paper (if at all necessary) are those between competing products on a platform and not cross-platform. The latter are simply a waste of valuable resources. Finally, the Computer Paper can resist this temptation, I believe it will truly be an authoritative publication in the near future.

Anthony Adams  
University of Indiana  
Westwood Hall

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**COMPUTER PAPER**

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**And, Prof. Guemter's Satisfaction - In Writing.** My (Ed) looks at areas with water gauges for complicity, technical support expense with 5 tonnes, "groundwater dry in the corner", 34 hour (Ed) and an 18-day (uncontaminated) measured amount.

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### Smart 386-DX33 System \$1125

Intel 386SX 33MHz CPU  
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14" Super VGA Color (200g Monitor)  
128MB Fixed Disk Drive with 4380 Cache  
2MB Real Time System Memory  
Intel's Super VGA Video Controller (SVGA)  
(\$125 off standard features listed)

### Smart 486-3X25 System \$1325

Intel 486SX 25MHz CPU  
14" Super VGA Color (200g Monitor)  
128MB Fixed Disk Drive with 4380 Cache  
4MB Real Time System Memory  
Intel's Super VGA Video Controller (SVGA)  
(\$125 off standard features listed)

### Pro 486-DX33 System \$1725

Intel 486SX 33MHz CPU  
128MB On-Chip Cache Memory (2 built-in)  
14" Super VGA Color (200g Monitor)  
128MB QUANTUM Fixed Disk Drive with 4380 Cache  
4MB Real Time System Memory  
33MHz 486SX Video Controller (SVGA) (4" Monitor Extra)  
(\$125 off standard features listed)

### Pro 486-DX25 System \$2025

Intel 486SX 25MHz CPU  
128MB On-Chip Cache Memory (2 built-in)  
14" Super VGA Color (200g Monitor)  
128MB QUANTUM Fixed Disk Drive with 4380 Cache  
4MB Real Time System Memory  
33MHz 486SX Video Controller (SVGA) (4" Monitor Extra)  
(\$125 off standard features listed)

### Pro 486-DX2 System \$2525

Intel 486SX 33MHz CPU  
128MB On-Chip Cache Memory (2 built-in)  
33MHz 486SX High Definition Flat Screen Low Definition Monitor  
128MB QUANTUM Fixed Disk Drive with 4380 Cache  
4MB Real Time System Memory  
486SX Video Controller (SVGA) (4" Monitor Extra)  
(\$125 off standard features listed)

### CAD 486-DX50 System \$2625

Intel 486SX 50MHz CPU  
128MB On-Chip Cache Memory (2 built-in)  
33MHz 486SX High Definition Flat Screen Low Definition Monitor  
128MB QUANTUM Fixed Disk Drive with 4380 Cache  
4MB Real Time System Memory  
486SX Video Controller (SVGA) (4" Monitor Extra)  
(\$125 off standard features listed)

### The ULTIMATE 486-DX2/40 \$3475 SCSI System

Intel 486SX 40MHz CPU  
256MB On-Chip Cache Memory (2 built-in)  
QUANTUM 14" Ultra VGA (200g Flat Screen Monitor)  
QUANTUM QUANTUM SCSI 2 Fixed Disk Drive with 25600 Cache  
4MB Real Time System Memory  
486SX Video Controller (SVGA) (4" Monitor Extra)  
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#### STANDARD FEATURES:

- Ampro 750 Series Delivery of 801 Key Keyboard
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- 486/50MHz Windows VGA with Software & Manual
- 1 Intel, 1 Parallel and 1 Serial Port
- 40GB/50MHz 801-2-8 (Intel) with Software & Manual
- 2 System Memory & Memory Bus
- Two Year Parts & Labor WARRANTY

Windows Plus Communication Special  
CPU: 386/50MHz Level Internal Bus & Busing Sys. Adapter & Power Management  
Windows for Windows Software  
486/50MHz Windows VGA with Software & Manual

Base Security Special  
486/50MHz 2" Format 25600 Page Parking Plane  
Internal Drive in one year floppy disk controller  
Full System Security

PARASIMONIC Single Flat Head to Printer 1025

QUANTUM 25-50MHz 40-40 with Instruments Cat-Client Reader

486 33MHz Security Printer (400g, 4pp, 1000 individual)

PARASIMONIC 486/50 Power Printer (400g, 4pp, 1000 individual)

\*The Intel 486 SX, 33MHz and the Intel 486 SX, 50MHz are not available in all countries. \*All prices are in US dollars. \*All prices are in US dollars. \*All prices are in US dollars. \*All prices are in US dollars.







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IPC 466MT (Intel 486DX2/66 processor)



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Fujitsu DL1200 wide carriage printer

(Suggested list price - \$799)

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Inside the shipping box you'll find an exclusive "IPC Super Fujitsu Printer Deal" coupon. Send it to IPC along with a cheque (or money order) for \$100.00 and a copy of your invoice and we'll send you a refurbished DL1200 printer covered by Fujitsu's full two year warranty. It's really that simple. No shipping charge to add and no taxes to figure out.

**The IPC Super  
Fujitsu Printer  
Deal!**

All three IPC 466 systems are based on Intel's blazing i486DX2/66 processor. The DAC's patented "speed doubling" technology enables the CPU to run at twice the speed of the motherboard, providing a 79% performance increase\* over comparable i486DX-33MHz based systems.

The Fujitsu DL1200 with it's unique upright shape, wide carriage, and quiet operation, is ideal for almost any situation. It can switch from continuous forms to single sheet feed at the touch of a button and can easily be upgraded with an affordable colour option.

So, head down to your local qualified IPC reseller and choose the IPC 66MHz system that best suits your needs. Each one carries a full three year warranty and is pre-loaded with MS DOS 5.0, Windows 3.1, and working models of Microsoft Word, Excel, PowerPoint, and Project.

Call our toll-free number for the name of the IPC dealer nearest you. Then use the "IPC Super Fujitsu Printer Deal" coupon to turn a great value into an unbelievable one. There's never been a better time to choose IPC!

\*Based on SPECintbase rates. The test program is a modified version of SPECintbase. Based on a 486DX2/66MHz and Windows 3.1. All other systems are measured from a 486DX2/33MHz system in the same test program. Results are normally in MHz.

# IPC

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## what's new

### Commodore Intros Network Server, Color Notebook, cuts prices on Amigas

Commodore has recently launched its most powerful DOS-based system to date: the Commodore 1165 SBC. Based on a 50 MHz Intel 486, it hopes to sell less than three as much as Windows-oriented servers. SBC is \$1,299, which includes a 280 Plus power supply, five 20MB hard drives, is the 16-bit disk and an OverDrive socket to accommodate the future 180 MHz 486/500 CPU from Intel. At the same time, the company announced the 4500S LIT notebook, a 3.5 16-color notebook for \$4,294.

Commodore also announced prices on new PCs on-line Amiga 4000 and 4000+ effective only until March 31, 1993. Their display 4000 can be had for as low as \$4,499 (included with two graphics packages) or even at \$4,199. The 4000+ can be purchased with a Dual Copy and Deluxe Paint IV for \$4,999 (or \$4,555 savings).

Also now available is AmigaVision Professional, the latest implementation of the new-based and moving tool.

Contact: Commodore Business Machines Ltd.  
(416) 486-4200

### Notebook computer offers removable hard drive



Designed for the computer user who finds a new way to handle their portable computer, the new Compaq 4500S notebook has a removable hard drive. The hard drive can then be plugged into a specially equipped desktop unit. It features a 25 MB 44453 microprocessor and weighs 4.0 lbs.

Contact: Removable-Drive Inc., Toronto  
(416) 494-3044, Vancouver (604) 277-4000

### Wyse launches new monitors

Wyse Technology (Canada) Ltd. recently added a number of new monitors to its current family of color and monochrome monitors.



New are the 17" WY-675, the 19" WY-685 and the 21" WY-695 in both standard and low-profile versions.

Also, and low-profile 15 versions of these models WY-605 and WY-615 monitors.

Contact: Wyse Technology (Canada) Ltd.,  
(416) 886-8810

### Yet Another Tax Program

La Morte Enterprises Inc. of Montreal, has updated its tax software for the 1993 tax year. It runs on IBM PC, is compatible with DOS and uses floppy disk. The state-driven tax return program is for 1993 annual year of production according to the company's press release.

Contact: La Morte Enterprises Inc. (514) 281-2426

### Don't Toss those Inkjet cartridges — Refill them!



Image Central Corp. of Danbury, Conn., has introduced a new product: Inkjet cartridges. It offers a series of refill cartridges for the Deskjet, Bubblejet, Jetprinter, Thermojet, Quantum, Decojet and various compatible printers and fax machines. They come in black and gold. Also, brown and silver. The three with gold dots come with a suggested retail price of two for \$22.

Contact: Image Central Corp. (410) 281-4955

### Acer Announces New Server, Service and Support Programs

Acer Canada recently announced the Acerline 500, an entry-level server with a 33MHz bus and a 66MHz 486/500. Price starts at \$2,275 US.

Offering a level on by Dell Computers and recently included by Compaq and IBM among others. Acer has decided that main-

tenance provided and even support is a must for its business as well. The company began for process in October 1992 and is now broadening the scope to include all products available under the Acer product line in either direct sales and support.

Contact: Acer Canada Inc. (416) 291-4955

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3. Microsoft Access 2.0	12. Microsoft Access 2.0	21. Microsoft Excel 4.0	30. Microsoft PowerPoint 3.0	39. Microsoft Project 1.0	48. Microsoft Visual Basic 4.0
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5. Microsoft Access 2.0	14. Microsoft Access 2.0	23. Microsoft Excel 4.0	32. Microsoft PowerPoint 3.0	41. Microsoft Project 1.0	50. Microsoft Visual Basic 4.0
6. Microsoft Access 2.0	15. Microsoft Access 2.0	24. Microsoft Excel 4.0	33. Microsoft PowerPoint 3.0	42. Microsoft Project 1.0	51. Microsoft Visual Basic 4.0
7. Microsoft Access 2.0	16. Microsoft Access 2.0	25. Microsoft Excel 4.0	34. Microsoft PowerPoint 3.0	43. Microsoft Project 1.0	52. Microsoft Visual Basic 4.0
8. Microsoft Access 2.0	17. Microsoft Access 2.0	26. Microsoft Excel 4.0	35. Microsoft PowerPoint 3.0	44. Microsoft Project 1.0	53. Microsoft Visual Basic 4.0
9. Microsoft Access 2.0	18. Microsoft Access 2.0	27. Microsoft Excel 4.0	36. Microsoft PowerPoint 3.0	45. Microsoft Project 1.0	54. Microsoft Visual Basic 4.0

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## what's new

### Lexmark Brings 600 dpi printing to Windows and OS/2 Users

Since the recent introduction of printers by Hewlett-Packard, 600 dpi is being hailed as the new corporate standard. Lexmark has been producing affordable 600 dpi printers since 1991. Now it's looking to expand some of its thunder by introducing a new

Windows print extender that powers up pages up to eight times as fast with less memory. By using the processing power of your 386 or 486 computer, you can substantially improve print speeds with these new boards.

In a twist of fate that characterizes today's computer industry, Lexmark has recently issued a deal with Dell Canada to distribute IBM compatible printers.

Contact: Lexmark (416) 477-2211

### Waterloo company links up with India's largest software firm

Matson Inc. of Waterloo, has formed a strategic partnership with Tata Consultancy Services, ITCS Incorporated in Bombay, India. TCS will market Windows/Windows 3.11/4.11 systems in India, an addition to provide full software development services in Mexico. TCS is India's dominant software developer and systems. According to a recent Business Week article, it reported \$44.7 million in software last year.

Contact: Waterloo, (519) 544-0302

### Font Directory for Windows

Super Font Directory is offering an extensive book for Windows font lovers. Colored covers are available. The first book is called The Font Directory and it shows over 1000 beautiful samples of fonts from many of the most popular packages of software fonts, including those from Microsoft, Adobe, Corel, Agfa, Digital and Bitstream.

Contact: Super Font Directory (519) 242-1900

### Impact Opens Ontario Office

Super Impact Software, authors of Impact Award software for manufacturers and distributors has opened a sales office and support office in Ontario. Impact Award is a fully featured software application, profit inquiry system for custom job shops. Many objectives of stock profiles and warehouse distribution.

Contact: Super Impact Software (905) 527-4477

### Byte Magazine chooses Actix Systems GraphicsEngine 32 as best of the bunch

The January 1993 edition of Byte Magazine has named the Actix Systems GraphicsEngine 32 the best of the bunch. The card uses the 3266C004 chip displays resolutions up to 3200 x 1000 nonlinear, and costs for \$400 is being distributed in Canada by Ventnor Graphics.

Contact: Ventnor Graphics (416) 608-4444

## Canada's Storage Experts

CD-ROMS • Hard Drives •

Hard Disks •

The collage features several advertisements for computer storage and hardware:

- Sun Microsystems:** Promoting Sun Sparc 10 and 15 servers, highlighting their performance and reliability.
- Quantum:** Advertising hard drives with capacities up to 100MB.
- Magsort:** Offering magnetic storage solutions.
- Fujitsu:** Promoting hard drives with capacities up to 100MB.
- Seagate:** Advertising hard drives with capacities up to 100MB.
- NEC:** Promoting hard drives with capacities up to 100MB.
- TIGIG:** Advertising hard drives with capacities up to 100MB.
- Micro Drives Canada:** Promoting micro drives with capacities up to 100MB.
- Other companies:** Including Sun Microsystems, Magsort, Fujitsu, Seagate, NEC, TIGIG, and Micro Drives Canada.

Hard Drives • Tape Backup • CD-ROM • Multimedia • Controllers • Memory



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VL-BUS VLBus compatible  
Bus mastering VLBus  
Flash EPROM/EEPROM support  
3 VL-Bus/ISA slots, 1 slot used  
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On-board Memory/Cache/Cache  
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# MICRONICS

ISA  
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ZEGNA's ProSystem II series of computers, incorporate the full line of advanced system boards by MICRONICS, the largest U.S. based board manufacturer. Recently, three-out of seven of the fastest PC's tested by PC World were built around the superior MICRONICS VESA VL-Bus system board.

MICRONICS advanced intelligent design offers superior quality, performance, reliability and compatibility all in one feature rich product.



\* PENTIUM Ready

## UNIX READY SYSTEM

80486 system  
76 Pin ISA  
64K Cache  
2MB SDRAM  
1.2 GB SCSI  
1.2 & 1.44MB floppy  
2MB VGA  
14" Mono VGA  
70-MB HD  
2x85



## NOVELL NETWORK SYSTEM

3 User Network System  
40MB/20MB SERVER  
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• 4x85/20MB/20MB  
• 2MB VGA  
• 14" Mono VGA  
• 70-MB HD  
• 2x85



## WINDOWS READY SYSTEMS

202MB 386-400/10 640K 15MB Cache  
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\$2,999.00  
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## HARD DRIVES

202MB 386-400/10  
177MB Master  
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177MB Slave  
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202MB 386-400/10  
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4MB/8MB 1 RAMS and 12MB Plug-in Chip Drive  
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Prices Subject To Change Without Notice  
All prices include GST and shipping charges.

All of the above systems are available with your choice of advanced Micronics system boards.

## what's new

### Low Cost B/W and Color Scanners from Plustek

Plustek Canada has recently introduced two low cost scanners: the ScanPac B/W 300, a 300 dpi black and white scanner that comes loaded with OCR software. The color scanner offers 600 dpi color scans in a single pass. The scanner supports the TWAIN driver

stand, making it compatible with a large number of programs on both the Mac and PC platforms.

Contact: Plustek Canada, (416) 677-2616.

### 11 hours from new Panasonic notebook



Panasonic has introduced a notebook computer that offers up to 11 hours of battery life. Weighing just 5 lbs and only 1.2" thick, the computer uses an AMD 486 SLX processor at 33 MHz, with a Nickel-Hydroxide battery that can be recharged in 1 hour and 15 minutes.

Contact: Panasonic Canada, (905) 528-9272.

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Record and playback voice messages from the Mac or any telephone. Automatic scheduling when outgoing messages.

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Apple Canada president, Peter A. Jones (left), with Bruce Knight, Apple's VP, and Jim Cox, EMU president, agree that the future of Macintosh computers.

### EMU gets Apple distribution, expands Vancouver Warehouse

EMU Data Systems Ltd. was recently selected by Apple Canada Inc. to distribute Macintosh computers in the Value Added Resellers (VARs). According to Bruce Williams, president of Apple Prologics, a Macintosh-specific peripheral supplier, who was also considered for the role, EMU was chosen not for its expertise in Macintosh products, but because it agreed a potential new market for Apple.

EMU also announced that it is expanding its warehouse operations in its Vancouver branch. The facility has grown by 1,000 square feet to a total of 11,000 square feet. The increase will allow more stock on the shelf, to better supply potential orders.

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### Inmac launches MacOnly mail order catalogue in Canada



Presenting you the first mailing of MacOnly, a new all-Canadian catalogue dedicated exclusively to Mac users across the country. The catalogue comes from Inmac, a five-year-old mail order marketing company. A casual flip through the catalogue awarded a wide selection of software and hardware peripherals for the Macintosh user.

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# Publish Like a Pro

BY GRAEME BENNETT



*It goes without saying that the capabilities of desktop publishing programs have grown since the release of the first incarnation of PageMaker in the mid-'80s. Indeed, traditional desktop publishing programs like PageMaker and Ventura Publisher now face considerable pressure from Windows-based word processors, whose graphical abilities encompass many of the features required in DTP applications.*

**F**actors aren't everything when you are looking for the right DTP application, but there are several key areas to consider. Because some of these are platform specific, I'll group them this way:

#### Choosing a Computer

There are compelling reasons to use a PC,

but as there are great reasons to use a Mac, Apple's Macintosh or what have you. Long-time readers will recognize my hand-in-reins: choose your software first.

These days, most DTP and graphics programs are available on both the PC and Mac. (One of three platforms represents a good choice for DTP applications. Despite

Apple's recent emphasis on low-cost Macs, little competition is — and will probably remain — the least expensive hardware choice. Ready all of the software Mac users covet for publishing is now — or soon will be — available on the PC. Hardware is, in most cases, cheaper and more plentiful, and so on. So what's new today?

PCs are not as simple to use, with as much extended and expanded memory configuration problems, which the Mac doesn't have. A PC is much slower to set up and maintain. Software installation and, especially, an installation are absolutely necessary on the Mac.

Next time its not desktop deep. Picking the right Operating System, we'll examine some of the tradeoffs that this one-of-one ecosystem, but one that remains the Mac is ideally suited for publishing.

Thankfully, once you are actually in a program and using it be it PageMaker, InDesign or any one of dozens of other multiplatform tools, the PC or Mac doesn't lose much. With few exceptions, the performance and functions add up to a comparable experience on either platform. And the part that really matters — the output from a printer or imprinter — is virtually indistinguishable and can be quite spectacular. We'll look at output a little later. Right now I'll discuss a few other issues of relevance to PC users. Mac users can skip ahead to the section titled "Visual Considerations."

#### PC Users

If you are already using Windows/386, DOS/386, etc., look for a DTP application that works in your chosen environment. For one thing, you'll own a considerable amount of disk space by not having to duplicate fonts, printer drivers and the other accessories of two separate graphical shells. For example, version 3.0 of Ventura Publisher for Windows comes on two disks — one of which contains nothing but examples. The GEM version, on the other hand requires more than a dozen disks.

As well, of course, you'll have less to learn, as most applications for Windows (and a similar tool and tool) A very early example is that of a certain line printer. During the course of researching this article, I spoke to several users who had serious typographical difficulties when trying to set



both G34- and Windows-based applications on the same PC. DOS machines have enough memory available as it is without compromising the first.

One advantage Macs users have long enjoyed is the "structural pages" command feature. This means that a Mac user can set an incoming document line with a message directing the print job into a number of pages to print, etc. If the system is taking a printer with all the users on a network, local Macs have their printers sharing the built-in capability built into the user can set who and what is printing.

Networked PC users have no comparable ability through client users can use their Microsoft Windows Printing System which provides improved performance and bidirectional communication between computers and printers, which used to be a major problem. If all users printer is the same, it's quite easy to get it to work. But if each user has a different printer, the user must set up the printer in the PC. The printer can report paper jams, paper out and other things. In addition, the standard software provides a simple front panel for configuring the printer according to a company configuration, the company will usually supply those capabilities for Windows-based network users.

#### Printer considerations

If you are on a tight budget, you might want to consider the dot-per-inch printer. It prints at a quarter inch dot at a dot per inch and is not too expensive. Current cost is \$200 is particularly impressive. The equivalent model for Mac is the StyleWriter II.

If you are interested about DTP, you'll find a laser printer. Mac users should get a Postscript printer. PC users can get away with an HP LaserJet or equivalent with at least one megabyte of printer RAM. LaserJet comes in various models. The latest generation, the Series III, is by far the best. The total laser printer for DTP has the following features:

- 1) 300 dots per inch or greater resolution, 300-dpi means an inch can fit up to 300 individual characters. It is cheaper than the 600-dpi laser II model is expensive. Note that 600 dots per inch is actually 600 x 480. This is not double the resolution of a 300-dpi unit — it's actually four times the number of dots.
- 2) Enhanced grey scales for better pictures of textured photos. HP's LaserJet II has this feature (Yes, I like this printer). Apple's new models have it, Star's 4200 a Writer models have it, as do their latest LaserJet models. Any printer that doesn't have level-up grey scales is dead in the water. Like old news print.
- 3) Resolving on all four sides of paper to add a layer here quite common in the past. A lot of work on "True" Adobe Postscript. Recent terms, however, have led me satisfied with the performance and compatibility of TrueType and PostScript. Postscript clones from LaserJet, Star and other vendors. The LaserJet clones of a few years ago had some fairly major compatibility problems. Today they are amazingly close — the LaserJet II Series 4000, a TrueType integrator, it would print all your standard Postscript or standard TrueType fonts. It even printed a few real Quick printers with real Adobe Integration built-in. There is always a danger however that a Postscript clone

will have a problem with a program that expects genuine Adobe Postscript laser printer. Adobe's Multiple Master fonts, for example. These fonts mirror all Adobe Postscript clones (and some other "good" Adobe models, the Apple's LaserWriter IIAT). These printers tend to have their ROMs updated so as to be able to use these new fonts. The latest generation of Postscript is known as Postscript Level 2. It is possible, get a printer with Postscript Level 2 means option.

Many new offers are to purchase of the Apple II Writer II Series printer a lot upgrade to Postscript Level 2. In Postscript-compatible computer. Other vendors may have some to upgrade option.

- 4) If you work in an office environment where both PCs and Macs will be using the printer, look for one that has bidirectional access ports and automatic post processing.
- 5) Look for a printer with multiple laser cartridges. HP's LaserJet printers and most Apple models can Canon printer models which have laser cartridges that may be easily added and recycled.
- 6) Be sure to check that, while the jet printers, laser printers may have enough RAM to hold an entire graphics page in memory. Some laser printers come standard with only 512K of RAM. You will have to expand the RAM if these want to use them for desktop publishing.

#### Other hardware

Mac users with type of computer you end up buying for DTP. There are a few other hardware components I should have.

If you regularly work on full pages, a full-page display is a good investment. Large grey scale monitors are not that expensive.

- 2) A color or grayscale monitor is useful. Most users I've seen my placed with the Hewlett-Packard's ScanJet IIc. The Hewlett-Packard IIc and LaserJet II Series models are popular, one can choose the Macintosh version of the driver. The Hewlett-Packard has a bug that causes it to freeze up occasionally when scanning large areas in black and white. A Macintosh installation needed the removal of this bug, but said the company doesn't plan on fixing it until "next year." So I guess.

If I mentioned in my August 1989 article discussing the features, I do not recommend a hard disk scanner, no matter how light your budget is. Keep saving.

- 3) Right after you get a color scanner, you'll be very interested in a large, fast hard disk drive. You must collect a lot of bad copies away with Speed compatibility drive, I can't recommend them. If you can't write a reasonable amount of data into tape backup, magnetic optical or Bernoulli drives. In an upcoming issue, I'll be evaluating the new 3480 "Bop" technology too. Stay tuned.

If you use a scanner, you'll find optical character recognition (OCR) software a real boon. There are several packages on the market. But my favorite is one of the best computer companies. This is the 3200 file for the PC and Mac is used and fast. It's not too fast. It does take a fairly long time with scanning hard. But the idea you need one of the full-featured OCR applications available.

## Better Performance from Windows 3.1

The Computer Paper ran an article detailing the steps to optimize a PC running Windows, but that was back in Oct. 1989. Since the release of Windows 3.1, a few of the settings have changed. Here, then, is an updated list of things you can do to get better performance from Windows 3.1.

1) **Enhanced Mode or Standard Mode?** If you run a lot of real Windows applications while in Windows, you'll get better performance and some additional capabilities while in Windows, you'll get better performance and some additional capabilities. If you run in Standard Mode, by this mode, DOS applications will multithread and can run in a window (as opposed to full-screen). Enhanced mode Windows can use disk space in virtual memory, too. The cost for these advantages is speed. You'll find that Windows runs 10 to 15 percent faster if you start Windows in Standard Mode with the command "WIN 3.1 /S" from a Command Prompt. That 10 to 15 percent is really small, though, compared only now in Standard Mode.

2) **Set more RAM.** If you've got two megabytes of RAM, you definitely need more. Consider expanding your computer's memory to 4 MB. You'll be surprised at the performance gains. By the way, what we add above about your hard drive writing at virtual memory does not apply here. You need real RAM to get real speed.

#### Improving Performance with SMARTDrive

SMARTDrive is a disk-caching program that uses some bits of RAM to act as temporary storage for frequently accessed portions of information. Getting this information from RAM is much faster than retrieving it from the hard disk every time you need it. There are some suggestions for specific machine configurations, see these examples as a starting point.

- 1) You can use CONFIG.SYS, AUTOEXEC.BAT or even Windows' 3.1 file with the option, included with DOS, to load SMARTDRIVE.BAT into the auto file. For example, you'd use SMARTDRIVE.BAT /S in the auto file.
- 2) 286 with 640K RAM. Although Windows 3.1 won't run on 640K machines, Windows 3.0 will — in that Mode 3.0 can't be loaded in the Windows 3.1. Standard Mode provides better performance and memory management, but it requires 1 MB of RAM.

On a one megabyte system, you won't have enough RAM to run SMARTDrive. Instead, use SMARTDRIVE.SYS. This does essentially the same thing as SMARTDRIVE, albeit less efficiently. It probably goes without saying that 3.0 is not as fast as 3.1 on a 1-megabyte system as on a 2-megabyte system. Well, maybe. The user should consider a lot more memory (maybe 2 megabytes or more) for a 1-megabyte system. (Overwrite, for example, or stick in character-based DOS applications.)

- 3) 286 with 640K RAM. Run Windows

in Standard Mode (STD) for the best speed. Try setting up SMARTDrive like this: C:\WINDOWS\SMARTDRIVE\STD.DAT

- 4) 286 with 640K RAM. Run Windows in Standard Mode or Enhanced mode, depending on your needs. Set up SMARTDRIVE like this: C:\WINDOWS\SMARTDRIVE\STD.DAT
- 5) 286 with 640K RAM with 640K RAM. Other Standard Mode or Enhanced mode will work here. You won't notice much slowdown in Standard Mode. Set up SMARTDRIVE like this: C:\WINDOWS\SMARTDRIVE\STD.DAT
- 6) 286 with 640K RAM. Set up SMARTDRIVE like this: C:\WINDOWS\SMARTDRIVE\STD.DAT

#### General Optimization Tips

- 1) If you are still using Windows 3.0, switch to Windows 3.1. It is faster and much more stable.
- 2) In your CONFIG.SYS file do this: In the section by typing DRVT=CONSOLE, then at the C= prompt, you'll find a line that starts with the word FILES. It says FILES=10. You can add to problems opening some applications additional FILES using more conventional memory.
- 3) If you are using SMARTDrive, reduce the number of BUFFERS in CONFIG.SYS to 10.
- 4) If you are running DOS 3.3 or higher, set the STACKS command in CONFIG.SYS to STACKS=10. This allows applications to dynamically allocate STACKS as needed, using more conventional memory.
- 5) Set the command line in the auto file to: SMARTDRIVE.BAT /S. This will set SMARTDRIVE to use 100K of conventional memory.
- 6) Use a memory manager program. Windows includes a file called MEMMAN.SYS in your CONFIG.SYS file. This file can help manage, but many memory managers (QMEM, MEMMAN, MEMORY COMMANDER) can free up additional RAM, as can MEMMAN's 80% threshold.
- 7) Use Windows' 3.1 Standard Mode. Standard Mode is an option for getting a permanent way. Theoretically, if you use an optimization utility on a regular basis, a temporary way would be just as fast as a permanent one. In most cases, though, a temporary way is the best performance. A disk optimization utility such as SmartWare's New York Speed Disk or Disk Patrol Software's PC Speed Optimizer is a worthwhile investment anyway. Disk optimization, which always finds that some where data and program files are scattered across the disk surface. ■

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Another useful business accessory is a modem. With a modem, you can send files to your local office faxline, obtain forecasts, clip art and program updates from your Internet ADS or information service, get answers to technical support questions and more.

If an alternative to a scanner is to get a CD-ROM drive and a few discs of clip art or scanned images, I recommend a drive that is compatible with multi-session Photo CD discs. Find any Macintosh or Windows CD for details.

A well-equipped DTP software bundle should include one or each of the following: a word processor, drawing program, publishing application, plus a selection of fonts and clip art. Many software titles incorporate two or more of these items. Microsoft Word for Windows 2.0, for example, includes a drawing module and automatically generates captions (though easily surpassed by most a single-level DTP programs). In addition to its

offshore word processing functionality, Add-In lists the selection of available The Type Tools (about 1000) with Windows 3.1 (or Windows the Wing) support and you have a reasonably complete DTP solution.

### Word Processing and DTP

One problem with trying to use a word processor as a page layout program is that it is inherently tough to set up linefeeds, multiple columns and graphics on a page and move them around as you refine your layout. PageMaker and other leading DTP titles have what is known as a "publishing metaphor" that makes it easy to drag items onto and off of a page. Any designer who has done page-lay out by hand will immediately see the value in this way of doing things. I don't recommend using a word processor as a page layout program unless your document conforms to a typical letter or book format. The more graphics, text lines and other fancy items you put on each page, the more of a hassle it becomes to deal with a word processor.

## Multi-function Software for DTP

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<b>PageMaker</b>						
QuarkXPress	•	•	•	•	•	•
CorelDRAW 8.5	•	•	•	•	•	•
<b>WordPerfect</b>						•
Word for Windows	•	•	•	•	•	•
Microsoft Publisher					•	•

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# Preview

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#### What's wrong with this picture?

On the other hand, some people use a drawing application (CorelDRAW is a popular choice) as a page-layout program. If your documents look more like one page, a drawing program is usually not a good choice, as most cannot handle multiple-page documents. CorelDRAW is better for people who know that many of its competitors (Adobe FreeHand, for example) doesn't even support tabs in any but all of three ruler lines into primary drawback. They are probably done when there's a few objects are displayed on the screen. A screen full of lines and a word graphics is considerably slow to work with. While all the fancy effects today's graphics program are capable of make it extremely easy to assemble a page that simply won't print for all of its merits, CorelDRAW is one of the more efficient.

That said, there is definitely a place for a drawing program in your DTP arsenal. CorelDRAW 3.0 comes with such an array of clip art and tools that it is a nearly irresistible bargain. When you look closely though, CorelDRAW's limits are pretty bad. The owner of local service bureau I spoke to said, "While number one, so CorelDRAW is."

#### What makes WYSIWYG?

Microsoft's 1.1 brought TrueType fonts to the PC, as Adobe 1 brought them to the Mac. That year, the most popular first book for publishing under Windows, while PostScript type 1 fonts are the standard on the Macintosh. You can use fonts in TrueType, PostScript or both for use on either type of computer. Most use vector business computers where you can also files created with WTP programs in two pages printed out on high quality magazines can type 1 fonts themselves. I mentioned that you purchase fonts in this format if you are serious about desktop publishing.

TrueType and PostScript Type 1 fonts are both scalable outline fonts that allow you to display and print text at any point on without "jaggies." There are subtle differences, but most users won't notice a difference between the print quality of a TrueType font and a Type 1 version of the same typeface.

As mentioned above, TrueType support a built-in fonts for the PC and Mac. To use Type 1 PostScript fonts on any PostScript printer, third parties require a program called Adobe Type Manager (ATM). This utility converts installed with some applications (like Photoshop and Microsoft's 4.0, for example). Mac users can call Adobe Systems (415-940-1300) and get a copy of ATM for \$59.95 as a result of a special deal Apple made with Adobe.

A point, incidentally, is WTP at an inch 14 PostScript point, that is, there are 72 pt "inch inch" (which is per inch). Therefore, the closer your screen is to 72 dots per inch the more WYSIWYG (What you see is what you get) you get.

#### Top WTP Tips

1) Output is everything. Print out a document on your best inkjet or dot-matrix printer and then have it printed out at 300 dots per inch at your local service bureau. Compare the two. How good which one your client will pay more for?

2) Less is more. If there's more on a page to good, will they be better? No. Although

experienced designers can break rules and still look good, try to stick to a maximum of five different typefaces per page. As a general rule, a black or extra bold sans serif font (Helvetica Black, for example) makes a good headline font, while a serif font (Times or, maybe a better font for body text).

3) Keep headlines short — six words or less.

4) It's All About Communication. If your headline font is too fancy or your layout is cluttered that your page is hard to

read, you're failed in your primary goal. Simple, powerful designs are better than busy, fancy ones. In addition, too, the graphics are a powerful communication. Use them, photographs and/or appropriate clip art to keep your reader interested.

5) What — You're not a designer? Try the remarkable technique of borrowing from the best (U.S.A. Copying Great Layouts from Famous Designers). Simply, it looks like this: you see something you like the look of in a magazine, book or (even of all)

one of those expensive design annuals. You make a page that looks very similar, but you just watch and imitate. You tell it to your clients. They love it as it's clearly obvious it's done it. Legally? Probably. Common? Absolutely. If nothing else, you will learn what makes a great layout. And before you know it, your own style will start to take form, and all that borrowing will start to seem like what is really is, a clone with the Masters. ■

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## Update

# PageMaker 5.0

FROM TIDBITS



Perhaps the most impressive upgrade I saw at Microsoft was Adobe PageMaker 5.0. On the whole, PageMaker's extra features fall in the category of "it's about time."

planning even that they're here. I'm sure some people will write to tell me that QuarkXPress has had such-and-such features for eight or 10 years and why is it a big deal that PageMaker has finally caught up? The simple answer is that as far as I know, PageMaker is still the most popular desktop publishing program around.

I'm not going to go through these new features in any order, and similarly, I'm not going to talk about the standard things that haven't changed. PageMaker has too many features to list that, and some would say that PageMaker has too many features period.

Other major new features I noticed in PageMaker 5.0 are its capabilities in moving objects between documents and creating and editing text and graphics. PageMaker 5.0 can finally open and edit documents at the same time (well, once in the 1980s, actually, but not content to stick up to programs from the last decade Adobe added a feature I've only seen a few other programs — the capability to drag in objects from one document to another without cut-copying and pasting. The copy-paste metaphor works fine in the 1980s but the metaphor of the Mac Plus era, the history

world of multiple desktop machines, large and multiple monitors, and constant MacFinder there is no reason why we shouldn't be able to drag data between documents, if not applications. I'd like to see this in most applications.

PageMaker 4.2 added the ability to rotate text in 90-degree increments, but this feature was generally greeted with derision — 90-degree rotation is unimpressive. PageMaker 5.0 should allow more creative uses with its new rotation of text and graphics in 30-degree increments. You can draw text and graphics with similar precision, 0.5, and by the way, precision will text or graphics after overhauling it, something that wasn't easy even with 4.2's limited rotation. This new will be welcome to any one who does single-page layout of posters and the like.

I appreciate PageMaker's new capability of printing non-continuous pages. If you wish to print pages 1, 5, 6 and 11 of a publication, you just type the page numbers into the page range box, separated by commas. Any application that prints should

have that feature. Adobe finally implemented printing an extremely common command in graphics programs, though only as an addition. There were by far the most impressive features I noted, but Adobe has a list of more — I'll elaborate some of them.

I don't wish to imply that Adobe fixed everything that might be considered as a problem in PageMaker. For instance, although Adobe completely redesigned the software model print dialog for the better, I hated PageMaker's old extremely model, especially in defining a text size as a page graphic style. This means can require a full copy review of a story as four model dialog boxes. We have the same space there again — there is no reason these things must be model except for design features.

Any other problem with PageMaker is that even after high-end word processors like Microsoft Word and word processors like WordPerfect, and printing tool programs like WordPerfect Works files on the Macintosh have implemented the PageMaker 5.0, PageMaker has helped. You can't really tell that in PageMaker's close relationship with Microsoft Word, another notable feature, but only the functionality of different styles is clear — whenever you need to adjust a specific style to one or more words that will be an entire paragraph you can do so on a document template level. Consider the words you might want to do this with: program names, book titles, comments in a manual, and the list goes on. I'd lay off my interface fears now that we should print and compare styles on interface overall. I think the point was not, PageMaker 5.0 seems like a solid upgrade to a popular program.

Contact: Adobe (415) 526-1999

## New PageMaker Features

- Horizontal and vertical reflection of objects
- Enhanced Control Palettes
- Numerically exact positioning and rotation of any object from its center or any handle
- Specific "rulers" available for word positioning
- Independently rotated inline graphics
- Cropping of rotated graphics
- Text mode of the palette enables in layout or story a flow view
- Numeric learning
- Baseline add
- Process-color separations of PageMaker text and graphics, as well as imported CMYK TIFF, EPS, and EPS images — all without leaving PageMaker
- Printing available up to 1800pi
- Automatic numbering of the page on individual paper you use
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# Now Up-to-Date™ 2.0

BY GRAEME BENNETT

Now has responded to criticisms and addressed virtually all shortcomings of version 1.0 of its calendar program. As a result, *Now Up-to-date 2.0* is the most advanced calendar and scheduling application available for the Mac.

Program: *Now Up-to-Date™ 2.0*  
From: New Software Inc.  
For: Macintosh  
Street Price: C\$40

For most users, the main benefit of the program will be its reminder features. This feature automatically notifies you of any current deadlines in your calendar, popping up a dialog box (containing a message to the screen) or sending a message to the screen (depending on your configuration settings) whenever a Calendar-based task, among other things, can be configured to display a digital clock in the menu bar (like the well-known MacShareware title *SuperClock*), clicking on the time display in the menu bar immediately displays the date. Clicking again reveals a stop-clock extension that reminds you when tasks are up on screen. By clicking down the mouse button, a drop-down menu appears that contains two options: "Show Event" and "Edit Event." Thus, from within any program at any time, you can enter or be notified of calendar events.

Reminders connect users with the main program, automatically loading and processing schedule entries in your selected calendar. The visually very clean aspect of the program is also be combined with a keyboard shortcut. For example, if you wish to insert a new appointment, you could open a key combination (I use Command-Meta), but the cursor is automatically to call up the Reminders dialog from there you can enter the date, time and a paragraph describing your message. When you click OK or press Enter, Reminders adds your entry to the current calendar and the dialog closes. You may then continue your work.

When the appointed time with arrived, Reminders will display the message. If you open up the main *Now Up-to-Date* program can send Reminders a message again (this might be your personal calendar). It is really flexible and it works well.

## Myriad of Options

Reminders enhancements have been added since version 1.0 of this program. Most fall into the category of "customization options." You can, for example, now specify that only "Date" or "Time" fields will be displayed in Views. You can create events that will appear only in the Multi-Day, Day and List views but which will not clutter the Month and Week Views. A team calendar associated with the program

uses this feature to display team phone hours. 2.0 is smarter, too about how it is we actually use a program like this. When you're modifying opening hours, a dialog box appears asking if you want to change Over All or future occurrences in the repeating series. You can now create an event (a missed appointment). For example, how can you be able to schedule simply by dragging it there.

Another great new feature is the addition of To Do items and a list view of all calendar and To Do items. In the list view of the program, each item has a date



associated with it. This means that any thing not completed on a particular day had to be manually dragged forward. Now the program allows through the use of a check box, a To Do item to be carried forward automatically at the date changes.

It is possible to create up to 10 categories in calendar items. The default settings are High, Medium and Low. You might add groups for your family, representing external events, other places in the calendar like Personal, Long Term Projects etc. to help sort out your To Do list a little more.

The List view can be sorted by double-clicking the titles at the top. (Double-clicking allows sorting by multiple criteria) and the titles can be "dragged and dropped" into new locations, so the things that are important to you are listed and shown. Using this technique, you can create a variety of views of your To Do and Calendar items.

## Real Help

The program has many detailed help-screen. Luckily, you don't need to consult them. When you place the pointer over each of the available options, a feature the company calls "Hot-Info" indicates the keyboard shortcuts that you can use to accomplish the desired action in the future and avoid the dialog box.



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Continued on page 49

# MS-DOS 6.0

BY GREG WHIELWRIGHT

*Microsoft Windows has been wildly successful over the past two years — so much so that it has overshadowed MS-DOS as Microsoft's flagship operating environment. But don't count DOS out — it is not ready for the OS retirement home just yet.*

**M**S-DOS is now in its seventh glorious year and has more than 100 million units world-wide. Since the release in 1980, the computer industry has changed dramatically — but MS-DOS continues to evolve and be a thriving platform.

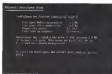
Microsoft says that there are now 200 companies in vying for the future of MS-DOS. In short words, Microsoft wants MS-DOS to be a common platform for Windows users (all Windows has become such an important PC technology standard).

More than half of all new PCs are shipped with Windows and the market is growing — the Windows applications market is approaching the size of the MS-DOS applications market. Given the widespread use of Windows, Microsoft plans to ensure MS-DOS does this to provide the low-tech bridge for improvements in Windows as well as become more tightly integrated with Windows.

Notwithstanding the success of Windows — for a time of reason Microsoft knows that many people will be using only MS-DOS long into the future. For example, many are comfortable with MS-DOS and their MS-DOS applications — or rely on certain specific applications that are not yet ported to Windows. Some will still use a computer that contains no Windows.

Microsoft has made a public commitment to continue to improve MS-DOS to provide more and better functionality for MS-DOS users while maintaining strict backwards compatibility.

All of which brings us to MS-DOS 6.0 — the new master of DOS. It contains a list



of improvements, additions and refinements. Don't feel sorry to let them go completely lost, but we will try to give a broad picture.

## Setup and Installation

One of the major criticisms about MS-DOS over the years has been that it was too hard to use. For that reason, Microsoft has gone to considerable lengths to allow this to be the case with MS-DOS 6.0.

Building on the positive feedback from the MS-DOS 5 upgrade installation program, Microsoft has made the procedure in MS-DOS 6 even easier and safer. For example, MS-DOS 6 includes a great deal of "auto-detection" software built in — so that it can automatically detect what hardware is now here and thus does not have to ask the user stupid questions about what all type display, keyboard and memory the system has.

MS-DOS 6 is also more modular — you can "install only" part of it and then add

other features later when you have more hard disk space here. It is also "smarter" of what other applications are doing — such as disk compression software. Code values (or full install) of MS-DOS 6.0 automatically for you if you want to and DOS 6.0 will allow default for you or not (it'll go to an attempt).

## Hard Disk Management

Hard disk management has been more and more sophisticated with each new release of MS-DOS — and this one is no different. Probably the single most important hard disk utility included this time is something called *DoubleSpace*.

*DoubleSpace* is a disk compression utility that doubles the amount of space on your hard disk by "crunching down" the existing data and being able to "un-crunch" it as the fly while you are working. Microsoft says it is safer than most third-party compression utilities of which there are a growing number because

*DoubleSpace* is integrated right into the MS-DOS kernel.

*DoubleSpace* does, however, offer compatibility with the popular *Stacker* disk compression software — so that *Stacker* compressed drives can be converted to MS-DOS 6 compressed drives without having to expand and reformat that data on the drive in question.

Since disk performance is often an issue when compressing applications are performed, Microsoft has included a debug-oriented utility called *Debug* (usually a simple subset of Norton Utilities *Speedy*, which maintains files and free space on a hard disk so that data can be written and retrieved more quickly and efficiently).

It should be emphasized that all these options, *DoubleSpace* does not need to be installed as part of the MS-DOS 6 upgrade — it is easily one of the options.

## Memory Management

Microsoft did include a number of new memory management features in MS-DOS 6 — but admits they were not as easy to use as the company would have liked to do. MS-DOS 6 knows when Microsoft calls an "improvement" memory management system that should take the pain out of optimizing memory usage on your PC.

Through a utility known as *MEMMAK*, it is designed to provide up to 2048 of extra upper memory (over what was made available by MS-DOS 5). Setup is an important part of the optimization process.

If, for example, *MemMaker* causes a message conflict by the way it has set up your system's memory, it will give you the

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## Local Bus

Continued from page 26

third kind of VL bus, called the *multimedia*, that allows up to 10 cards, but which is limited to 23 MHz.

ISA ISA has been around a lot while and has only slowly caught on. Building on full ISA compatibility in every doc made it more complex than it would have been otherwise. ISA is not as fast as VL, but it handles another pressing problem that VL does not — automatic configuring. More on this later.

PCI VL is a commanding lead over both PCI. PCI isn't even out of the blocks yet. 33 MHz PCI is about the same speed as 33 MHz VL. PCI would not likely begin to dominate until local cards end with a 66-MHz version closely tied to the Pentium chip. Most computer builders feel remote-bus local bus monopoly on the chip. They are not likely to voluntarily hand over any more personal parts of the computer's anatomy to Intel's exclusive control. PCI is off in a close race because they still have not yet decided what the bus control should look like. PCI is a substantially complex design than VL, though it may be difficult to design to over 100 MHz CPUs. It is currently still slow up front in high-end clocks. It can handle up to 100 MHz, as speeds from 10 to 33 MHz. It is aimed at high-end and Pentium systems, not the older 386/486 and 586.

MCA MCA was the first of the alternative buses. IBM was a late but greatly in the early days, making that MCA bus manufacturers pay royalties for previous bus designs too. Though MCA was technically advanced manufacturer on third party bus designs is closely controlled by one company. Creditable IBM identified its licensing policies, but there it was too late. IBM's second standard was hardly fast MCA's choice of future success.

Qualifying Apple computer through the alternative bus in these segments of its own line of computers, but some day it may find its way into the 680-6803 domain as well. It is slower than VL but faster than the competition.

Others (Apple) (Apple) was working on a local bus, but I have not heard much of it lately. Any successful successor would have to be much faster and cheaper than the existing designs and it would have to be supported by a broad base of manufacturers. CPU, the computer maker, announced a local bus that will likely not survive the ISA/PCI onslaught. SJ also tried with the ACI (Advanced Component Interconnect).

I think the likelihood of the future may be polyphasic — with an ISA slot (slow PCI slots, three VLB/ISA slots and a couple of pure VL slots.

Modern day VL machines have a mix of up to 33-MHz VL and "new" 486-style VL slots. I think we might extend the idea to include a spinoff of ISA and VL slots.

## Why ISA Ain't Dead Yet

If you have ever attempted to install a mouse, video card, CD-ROM, hard disk, MIDI music card, modem, audio, scanner or interface board card you will likely have had a minor nervous breakdown. All these cards conflict. They fight over available computer resources called I/Os (Interrupt Requests), the I/Os (Input/Output port addresses) and DMA (Direct Memory Access) channels.

There are five popular I/Os, (I/Os) to (I/Os) on the AT. With all these cards fighting over these five I/Os, with no obvious winner, when will the I/Os of the computer doing the installation — thus the cards end up trying to use the same I/Os with disastrous results. Early card must be told which I/Os to use by changing the patterns of little jumper plugs over pins pins on the adapter cards.

There are however rules for assigning these I/Os. For example, modems on COM1 must use IRQ 4. Modems on COM2 must use IRQ 3. The LPT1 printer must use IRQ 7, but in a pinch it can do without. IRQ 0 is 0, 1 and 2 are reserved. IRQ 2 is sometimes available, but then it is really IRQ 3. It sounds like IBM is interested!

There are only two DMA channels, five, on the platform in most cases (three).

My guess is, ordinary business users hope to find out of getting this cycle when there are many adapter cards. I think when there are only a few cards they can usually be connected without conflict.

You are probably thinking "Why doesn't the computer card all this and itself automatically. That's the sort of thing a computer is good at. Why does the computer make up I/Os features and not status doing this?"

That is exactly what MCA and ISA do. You just stick a new adapter card in and run a utility program that figures out this particular card and tells each card which I/Os, (I/Os) ports and DMA channels to use. Since I/Os are not such a simple matter, these bus board adapters often and provide ways to use standard adapter cards to share an I/O.

Unfortunately when you put down the cards in an ISA machine they don't know how to participate in the automatic allocation scheme, so you have to handle them manually — task is quite rare.

Installing a becoming more complex by the day, installation costs will eventually force us to introduce (I/Os)/DMA support. Electronics costs are dropping and people costs are increasing. This means that the situation is now today in ISA and VL and might be added in future to VL in cost.







what would happen if you were using AutoPhotocopy? You wanted to show a group portrait of six guys from one of the screens. There is no way the CPU could properly describe that image to the co-processor and all it gets out is a little like image. It has to revert to sending the image bit by bit, even if it there were an acceptable format.

Thus, it really is best to have a fast bus to spend up such data transfers. Unless you are working with photo images, rather than text or files, the VLS bus needs to wait.

#### How To Get Nothing For Your Money

I have seen people buy an expensive little motherboard, then refuse to buy any expensive ISA adapter cards to go with it. They pop into it completely with the ISA adapter cards. They get into speed limits from this. Only when you want to add the ISA adapter cards does it go any faster than a cheeping pig.

The same applies to VL systems. When you use MCA, you have no choice but to buy MCA adapters.

General comment: There are VL cards and motherboards that can handle faster than equivalent ISA cards. They are VLs in name only. The best way to improve yourself is to limit that both the card and the mother board support bus monitoring. Unfortunately bus monitoring does little to improve I/O performance, but it greatly helps CAGI and presumably future versions of DOS/Windows.

#### Where Should I Put My Money?

Motherboard prices have been dropping to roughly over the last few years, most people want motherboards off also about two and a half years and most looking for a replacement.

Presumably this trend will continue. This means if you pick a motherboard with an upgrade bus, all is not lost. You will get a chance to change it again in three years.

You can buy a motherboard with one or two extra I/O slots for less than \$100 extra. This gives you a bridge for the future. You might want to buy an extra one VL hard disk, a video card for the slot, or you might just use ISA adapters now. VL adapter cards are new. Industry leaders and improved boards have not yet emerged.

A full ISA system is quite a bit more expensive, especially when you add in the cost of ISA adapter cards for video and hard disk. If you want a big, powerful system and guaranteed to work without fuss, then ISA is the way to go. However, ISA is a bit boring.

If I were making decisions for road processing, or for an I would get a computer on video card. To bridge against the possibility of lack of video drivers for future versions of Windows, I would go for 8548 compatibility as in the 486. Vantage and Ultra series. The video contains type of video compression on the 32 card. They don't have 32-bit compatibility, but some 32 cards are so fast and so cheap, I might still be tempted.

#### Learning More

Steven McNeill wrote a technical article comparing the various buses in the Computer 1991 File Magazine. Peter Butler also wrote an article in the February 1991 edition of Computer Monthly. For heavy duty techni-

cal information, see Michael Butler's article in the July 8, 1990 edition of Microcomputer Report. He did another article on PCI for the December 9, 1990 issue. If you want a copy of the VL spec, all you need do is join VESA for \$1000 to \$1000 per year depending on your company size. Intel sells the PCI spec for \$100.

#### Credits

As usual, my search on IBM helped gather information and lead me to the staff. Thanks go to Ken my business, E. O. Graham, Alan Bartley, Steve Krawitz, John O'Rourke and Jay Froehlich.

#### Summary

I got a parallel between the integration of VL and the dominance of ISA data. While ISA data came out, they lacked standards, could not be properly tested and could not be integrated in the field. These problems are still much with us, however, the solution to integrate they have almost completely taken over the market.

VL is a relatively crude but much faster and cheaper solution to a big problem. Because of the relative difficulty of changing bus standards, the last thing I want is a temporary replacement that we will be stuck

with for decades. A new bus should have gone through the VLSI, does not have this. However, like the decision, VESA VL bus will prevail. However, I am hoping for PCI, preserving that gets it all together and standardizes the connector.

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BY JAMES MACPARKLAND



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Your doctor must book an appointment to visit the hospital and use their computer to view the images. Because this kind of equipment is the high demand item with short supply for an appointment. Meanwhile, a high speed data link could deliver this to your doctor's office in a few seconds.

2) You run an audio production studio. The person you work on just sent you a particular file in another city. You fly this

person in and get them up in a head for a week. It ends up costing you thousands of dollars.

A CD quality digital telephone link would have let this person stay at home. It would have saved you a bundle and would have made your customer much happier.

3) You're a consumer developer and you're looking for information on a new data compression technique. You pour over all of the trade magazines but you still nothing. You wait a week of your time looking for an answer. Your customer is waiting.

You could have had the answer in hours if you had access to a real-time forum on the topic.

4) Your band has just made a new rock video. You're not that famous to play all the arenas with your video, but you're lucky to get on campus radio stations.

Your band starts its own bulletin board system, but instead of messages and votes, you have videos. You're instantly on the air.

5) You're a home builder and you're at a trade show. Instead of hanging up pictures of your model homes, you establish a live video link from your booth to the real thing. Visitors direct your camera operator

around the house, looking at things that previous could never show.

### Electronic highways

The technology exists for every example I've shown. The problem is the infrastructure to provide these services is people like you and it just doesn't exist.

It's often not taking to do less work in our homes using a bunch of thinking wires taped together. Existing wires were never designed to do that. Multitasking is the nation's information-communications network.

In the 1990s both the Canadian and U.S. governments launched giant initiatives to build highways to connect our towns and cities. This both aided and costed our industries. In the economy comes away from heavy industry and towards the information economy we require new highways — electronic highways.

Take a look at the traditional telecommunications industry: telephone companies provide a low-capacity on-demand link from individual to individual. Radio and TV provides a high-capacity one-way link from the broadcaster to the masses.

What? Canada needs it. A high capacity

Continued on page 38

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# bookreview

BY KEITH SCHENGLI-ROBERTS

## Gates

**How Microsoft's Mogul Reinvented an Industry — and Made Himself the Richest Man in America.**

Author: Stephen Mann and Paul Anderson.  
Publisher: Doubleday, 1990. 354 pages.  
Price: \$25.00.

*While many large computer companies are cutting back just to keep in business, Microsoft is thriving with record profits. This is the stuff that business biographies are built on, and Gates is no different. In fact Gates follows hard on the heels of last year's Bill Gate's biography Hard Drive.*

In this exhaustively researched book, authors Mann and Anderson (interviewed Bill Gates, many of his associates and had access to the Microsoft archives. This is not an authorized biography however, and Gates offers a critical look at the way Microsoft was built. The story of Microsoft is also the story of the personal computing industry.

Computer fanatic since his teens, Bill Gates and Microsoft co-founder Paul Allen wrote a version of the BASIC programming language for the first popular personal computer the Altair, back in 1975. By then, the IBM Gears had already started his first information based company Info-Gate, which made machines that could automatically count how many cars passed by a road over a given amount of time. To get the sale price right, for their little co-ordinating beeper-Gates and associates made a program on a large IBM-40 computer that simulated car functions. The Altair was based on a

simple processor and when Gates and associates realized this they set about building a program to its functions. With that in hand they created a BASIC that could run on it, and gave Altair to sell it. It is Microsoft was born, thanks to some smart programming on a borrowed computer. From this point on in the biography Bill Gates and Microsoft essentially become the same thing.

Gates of the more interesting services of the book looks at Microsoft's long and often rocky relationship with IBM. It begins with Microsoft coming up with an operating system for the launch of the IBM PC back in 1981. When Microsoft was approached by IBM for an operating system for the IBM PC, Microsoft didn't have one. Instead, the potential of selling an operating system to IBM. Bill Gates brought out Seattle Computer's QDOS ("Quick and

Dirty Operating System"), made some minor changes to its code and then sold licensing rights for the new Microsoft DOS to IBM. This near-legendary story in the computer industry is meticulously portrayed by the authors, and makes the scene of the best meeting in the book. It also looks at the increasingly strained relationship between Microsoft and IBM that stretched to breaking point over the development stages of Windows and the OS/2.

The book offers a real insight into how Microsoft operates, and what it is like to work for the company. It is a very different story than others on being highly intelligent, competitive people who are willing to get

in long hours — in other words, just like Bill Gates. The down side of this is the many cases of employees "burning-out" by the demands placed on them.



## The Computer Book Specialists



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A computer scientist in Britain and a philosopher in the United States have written this book. The book is a practical guide to the design of the program. The book is a practical guide to the design of the program. The book is a practical guide to the design of the program.

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In the end this is not so much a biography of Bill Gates but of Microsoft. It is an often fascinating read, but Bill Gates the CEO is rarely separated from just plain old Bill Gates. There again after starting this book you'll probably agree to long with most of his competitors that there is nothing "freaky" about Bill Gates. In short, while we do not find out much about the private Bill Gates, this is a great "biography" of Microsoft. ■

## CommTalk

Continued from page 32

an internal link that can join two people together as easily as a document. We need a multimedia-ready data network, one that will take us into the next century.

Without this ability Canada is doomed to become a country that starts nothing but export (non-value-added) resources and other high-value-added products. Welcome to the third world.

### Business monopolies

How can Canada survive in the information age when we first added the rule of telephone companies that there is a statutory price ceiling on "local service"?

When we are loaded when the CBC wants to spend years appearing on air with various accounts in error, when our modern neighbours and the Japanese are moving cities around us?

Canada has built itself into a leader in the telecommunications industry. Take a look at companies like Northern Telecom, Rogers Cable, Bell and Maripal. We are one of the more cable-TV rich countries in the world. Where is the teleoptic network?

If we sit around and let the businessmen create this kind of system for us we'll end up selling the last T-bone steak you'll have around and there is nothing left.

### Is there hope?

I was recently invited to attend an anniversary of the Ontario government. Ontario promises that it has passed the Bill of Rights of a advisory committee on Ontario's long term telecommunications strategy.

Many expect almost every of our own citizens about role of telecommunications in the future economic growth of the country. Unfortunately this was not a federal program but it did acknowledge many of the most both cultural and economic.

What is the report in explanation is — Welcome my technical training Ontario's future. Ontario has (0416126-9412). If you are outside of Ontario ask for an extra copy for your MPP and indicate the use of the words "This is a document for the whole registry available in the file of this plan." ■

## Desktop Music Publishing

Continued from page 37

Digital Good Bytes. Several sources informed Penny Lippard and according to the MTR, Broadcasters cannot, now to come.

### Printed Output

Logic does a pretty good job of controlling a MIDI port as far as the MIDI port music, but it is not a musical Mar-janet, but it is a "good" MIDI. It is best to talk about printed output objectively. There will always be some users who will

need overall learning, or code itself, is something that is not in the program. It is disappointing that there appeared to be no way to produce the necessary double bar as the end of a score and that the "stem" feature was not used. It was not a great improvement when I added it to the stem in the stem bar. Other musical problems can still undoubtedly find their way around in complex. It is also in the printing is not Logic's strongest suit. Given on the stem for comparison, it is much better, as is shown on the MIDI. I used to have time on the MIDI for its ability to handle virtually

any musical notation you could imagine. It is now better than usability is a more important value than a do-everything as it features.

Thanks to all the other people who respect the information, management and performance of the MIDI.

# Brady

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I had 1/4th circle to the shortened flag. Through start I was to begin my final lap. I glanced at the gap to second place. Elliott, Brown and Gerhard Berger were scrambling. It was just two seconds behind me. Through the bank straight and into the Adelaide hairpin once again — it was time for Berger to make his move. I aimed to drop in deeper than I should have, then cut back right under his back wheel. We crossed.



He slowed — I didn't — and Palmer crashed between us. One half lap later, on the back line, I had hung on to the inside victory, weaving in thick Palmer traffic close he tried to pass. Roger Ruckard just 20 seconds behind the fractured blocks, knew that didn't matter now. I had emerged victorious at the top level of Sports Illustrated — with a still child's grin.

World GI could be the most difficult new standard yet to be constructed. The primary issue in form the auditors, looking ahead into the fall was wing) and Check them of those as (good) Then was even get more about the possibility of those behind! Although views (partial broad and read) are available as any state but should be improved for the twenty second inquiry situation.

Each of the states actual 1991 Formula One winners are depicted in automobile detail — right down to the proper placement of racing. And the fact that their racing acts like running really does — sighting drivers in a perfectly driven curve or screeching off speed when one wheel is placed upon its proper surface by the suspension of this motor car.

Microport International's 386 or better machine with at least 16MB RAM for Word Client, and having tested in both 16-bit and 32-bit modes required no payment and only one 4MB RAM to 32M unit took any special software (such as the examples of some delay time on the screen).

Opening a World Circuit section is an untrodden path, following the still level of the competition, much of choice, size, length, method of control is good [over] to highly recommended; automatic in most and transaction and graphical procedure. Article is nice (the usual "summit of devil" opinion). World Circuit offers "adjustable" frame rates, allowing for human to define how many (and in what) to receive five frames/sec or still across the screen. As with every other leading edge computer game, World Circuit will be accessible to anyone at each machine, but it's marginally (by using only power per screen device) not as accessible an attraction to solo play as most other games. The "game" (those who play) will show the game a full team and time, the compensation of both players will be worth it - it's purely a personal inclination.

Once everything is running smoothly, it's time to get into a driver behind the wheel. The first time you'll be in the driver's seat, and, in many ways, if there it is to be more than one player, participant, two will be selected at the stage, and strategy or simply is initiated. Multiple players need to be in the driver's seat, and behind the wheel of their respective sides throughout the position, qualifying and racing. Player One drives a kart in his own corner, while Player Two drives the other to his opponent.

During the actual race, the two players will take over one player's car while the second sits in the driver's seat. The first to cross the finish line will be the winner. The other two will be the losers. The other two will be the losers. The other two will be the losers.

On the track, everything looks as it should. Chassis cars look like other cars (same plate angles) and are like real cars would sit. Judging by price efforts in the spirit of racing, remember: this was not a low easily accomplished, and all the more credit to Honda Circuit's illustrious designers and

1000

World Circus is certainly a pretty sight, and there are plentiful all-consumer objects, in the form of souvenirs, for speed and looting. The stars of Moscow—the pacesetters—are in the bathous of Moscow and the hairy ape owned by a vet next are particularly appealing, and for the first time in a touring circus, observations changes have been surreptitiously incorporated.

The World Circuit package includes a master-printed, graphically pleasing manual, drawing (much of the) current French data into marks and beams and doing techniques, but is purposely less an actual qualifying and test instructions — leaving these decisions to each competitor.

accept my "Up 30 (the Day)" as an extra change in your "Dependent" update button (For Nations 11 on word (physics) were: all times under and light conditions at the start of a day will not change past as it will during the race last, but instead will leave the engine's own. This technique, although not described in the manual, will allow for an additional hour when the starting lights are gone. For found that approximately 15,000 RPM with a few cars' selection, most often as the competition.

Finally, while I do not see anything to be lost, as well as the fluids and eyes, the high pitched screams of a different first grader is an accurate and meaningful as the choice of pitch—a critical item considering one's steady exposure to those sounds. However, it would be a treat to be able to experience the singing engine notes of an truck race as they are played on air (perhaps). As well, I guessed, more pronounced the speed, more fluid feeling would be a positive addition.

The winner of World Circuit has been anticipated by digital racing fans for some time, and the wait has been unseasonably worthwhile. It is the latest system from the internationally renowned

**Steven Nishi** is a freelance writer and startup publisher (including a *Forbes* guest stint as co-contributor) in California based. On French culture, this is more extensive.

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## Apple News from T148775

### New LaserWriters

You've heard about the new LaserWriter Pro 410 and 430, and the latest news is that Apple will ship the 410 with 8MB of RAM all the time, while slowing the 410 in price at 400 dpi. Check this before you buy one, though, just in case. The 410 and 430 expand Apple's printer offerings on the high end. Apple's new LaserWriter Select 300 and the LaserWriter Select 350 fit into the low end of Apple's printer offerings.



### LaserWriter Select 300

The entirely compact 300 dpi LaserWriter replaces the LaserWriter LS. Unlike previous LaserWriters, it uses a full duplex engine that prints at 10 pages per minute, and it holds three optional paper trays for a grand total of 600 sheets. The LaserWriter Select 300 includes PostScript and QuickDraw and can be upgraded to PostScript and PhotoGrade, but its main feature is its 400-dpi price — \$1875. This might be a good printer in a limited number of specific cases, but we just feel that it makes more sense to either buy a cheaper higher priced or to wait up the dollars for a more versatile, normally irreplaceable, PostScript printer.

### LC III News Reports Wrong

New reports that the LC III could take a single floppy card are wrong. The Cerebra 68030s take a single NuBus card as long as it's short enough, but the LC III is limited to an LC style PCB slot.

### StyleWriter Owners Beware

Don't try the latest cloning option from the StyleWriter II clone or a StyleWriter II. The clones mimic the old cartridge. This is probably why Apple has a mailing list for the StyleWriter II. It's widely available and doesn't recommend that you use it with the StyleWriter II.

### Canadian System 7.1 Upgrade

Canadian users will be pleased to hear that they can use the System 7.1 Update Kit to 640 direct from Apple Canada. Call Apple Canada at 800/440-2775 ext. 798 in order. Members of registered user groups in Canada can save an additional \$40 until March 26, 1993, but they must go through most requirements. Later people's have their own local group to request a form of the address.

Hardware address: Apple Canada Inc., 1400 Finchway East, Markham, Ontario L3R 9Z1

Appropriately limited only applies to the English version of System 7.1, but a similar offer for the French version should arrive this month.

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## Small Office/Home Office Sales To Balloon

**NEWBY I. MARRASCHETTO (MI)** — Fuelled by total economic distribution and product trends, the U.S. Small Office/Home Office advanced technology market will reach a six-figure total of \$10 billion in \$14.1 billion by 1994, says a survey by IIS Strategic Solutions.

The trend toward working at home and buying technology in small stores took hold in the late 1980s and since that time, products such as computers, printers and fax machines have gained increasingly widespread and easy to use, explained IIS' Raymond Roggs in an interview with *Newsday*.

Around 1987 or 1988, large discount and department stores began to adopt suppliers' from vendors like Sharp and Canon to group technological and other office equipment together into a single store area, Roggs told *Newsday*.

Initially a forerunner, the number of home-based businesses started to skyrocket, rising from 13 million in 1988 to a current figure of 60 million, he added.

Manufacturers toward product designers and consultants are stimulated by new fax machines that sell for under \$300 and handheld computers like the Sharp Wizard II and upcoming Apple Newton, the market analysis noted.

PCs now hold the largest share of SSOHO product sales, with printers coming in at number two and these products will maintain the sales respective ratio to 1994, the IIS study says. Also over this period, telephones will show the most dramatic growth, estimated at 14 percent per year. Cellular and other portable phones are predicted to be especially popular. Growing distribution channels retail is expected to be the fastest growing by far, but the SSOHO figures also represent some sales through Value-added resellers, systems integrators and mail-order, particularly of specialized products.

Before the small stores were widespread, advanced technology and other office equipment tended to be widely dispersed throughout the West, he told *Newsday*.

The change took lots of monitoring on the part of the retailers, but the stores

found that sales picked up daily when the office equipment was consolidated, he reported.

The new store layouts lost an important profitability that also contributed to sales growth, he suggested. "The retailers (discount stores) share the example," just 1994.

With on display at the end of an aisle, to even if you came to lookstore to buy record albums, you'd still receive an advertising impression," he said.

The new IIS study also identifies several factors that retailers want to buy SSOHO products in retail stores, along with low

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The following is an update of the 88\$ List we ran in March 1987

Item #	88	Price	Item #	Price	Item #	Price	Item #	Price
The Computer Paper	17	\$24.95	1800	\$24.95	1900	\$24.95	2000	\$24.95
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